

**TRANSMITTAL OF APPEAL BRIEF**Docket No.  
MIY-9007

In re Application of: Masanori Nakamura et al.

Application No. 09/355,946-Conf. #7148	Filing Date August 16, 1999	Examiner J. L. Goff	Group Art Unit 1733
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Invention: POLYOLEFIN ARTICLE AND METHODS FOR MANUFACTURE THEREOF

**TO THE COMMISSIONER OF PATENTS:**

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed: November 18, 2003.

The fee for filing this Appeal Brief is 330.00.

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The Director is hereby authorized to charge any additional fees that may be required or  
credit any overpayment to Deposit Account No. 18-0013.  
This sheet is submitted in duplicate.

  
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Docket No.: MIY-9007  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Masanori Nakamura et al.

Application No.: 09/355,946

Confirmation No.: 7148

Filed: August 16, 1999

Art Unit: 1733

For: POLYOLEFIN ARTICLE AND METHODS  
FOR MANUFACTURE THEREOF

Examiner: J. L. Goff

**APPELLANT'S BRIEF**

MS Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This brief is in furtherance of the Notice of Appeal, filed in this case on November 18, 2003.

This is an Appeal Brief under 37 C.F.R. 1.192 and appeal the decision of the Examiner dated November 18, 2003 (Paper No. 20). Each of the topics required by 37 C.F.R. 1.192 is presented herewith and is labeled appropriately.

The fees required under § 1.17(f) and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

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This brief contains items under the following headings as required by 37 C.F.R. § 1.192 and M.P.E.P. § 1206:

- I. Real Party In Interest
- II. Related Appeals and Interferences
- III. Status of Claims

- IV. Status of Amendments
- V. Summary of Invention
- VI. Issues
- VII. Grouping of Claims
- VIII. Arguments
- IX. Claims Involved in the Appeal
- Appendix A Claims

I. REAL PARTY IN INTEREST

Sekisui Chemical Co., Ltd. of Osaka, Japan is the real party in interest of the present application. An assignment of all rights in the present application to Sony was executed by the inventor and recorded by the U.S. Patent and Trademark Office at **reel 010273, frame 0855**.

II. RELATED APPEALS AND INTERFERENCES

Application No. 09/931,763, a divisional of this application, is concurrently on appeal, and may directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 11 claims pending in application.



**B. Current Status of Claims**

1. Claims canceled: 6
2. Claims withdrawn from consideration but not canceled: 1-4, 9-10
3. Claims pending: 5,7,8,11,12
4. Claims allowed: none
5. Claims rejected: 5,7,8,11,12

**C. Claims On Appeal**

The claims on appeal are claims 5,7,8,11,12

Accordingly, the Appellant hereby appeals the rejection of claims 5, 7, 8, 11 and 12, which are presented in the Appendix.

**IV. STATUS OF AMENDMENTS**

Applicant filed an Amendment along with a Request for Continued Examination on April 30, 2003 in response to the final Office Action of January 30, 2003.

**V. SUMMARY OF INVENTION**

Claim 5 recites a method for manufacture of a polyolefin article comprising: selecting an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 - 80  $^{\circ}\text{C}$  range ( See, for example, page 8, lines 7-12); depositing a peroxide, combined with a polymerizable monomer capable of dissolving polyolefin, on a surface of the oriented polyolefin material (See, for example, page 17, lines 3-18); and bonding said oriented polyolefin material to a second polyolefin material by the application of pressure and heat, thereby manufacturing a polyolefin article (See, for example, page 14, line 20 to page 15, line 3).

The present specification (page 15, line 16 to page 17, line 2) lists examples of low molecular weight liquids (nonane, octane, decane, benzene, toluene, xylene, etc.) and

polymerizable monomers (styrene, (meth) acrylic monomers, divinylbenzene, diallyl phthalate, etc.) which would be able to dissolve the polyolefin material. The result is a two-part adhesive of the peroxide + monomer.

## VI. ISSUES

The issues presented for consideration in this Appeal are as follows:

- (1) Whether the Examiner erred in rejecting claims 5 and 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson?
- (2) Whether the Examiner erred in rejecting claim 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson and further in view of U.S. Patent 4,717,624 to Ikenaga et al.?
- (3) Whether the Examiner erred in rejecting claims 11 and 12 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson, and further in view of U.S. Defensive Publication No. T888,001?
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- (5) Whether the Examiner erred in rejecting claim 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen and further in view of U.S. Patent 4,717,624 to Ikenaga et al.?
- (6) Whether the Examiner erred in rejecting claims 11 and 12 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen and further in view of U.S. Defensive Publication No. T888,001?

Each of these issues will be discussed in turn.

## VII. GROUPING OF CLAIMS

For purposes of this appeal brief only, and without conceding the teachings of any prior art reference, the claims have been grouped as indicated below:

- (1) Claims 5, 7, 8, 11 and 12 stand or fall together with respect to the §103(a) rejections.

In Section VIII below, Applicant has included arguments supporting the separate patentability of each claim group as required by M.P.E.P. § 1206.

## VIII. ARGUMENTS

In the Office Action of July 17, 2003 (Paper No. 20), the following rejections were presented by the Examiner:

- (i) 35 U.S.C. §103
  - (1) The Examiner rejected claims 5 and 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson;
  - (2) The Examiner rejected claim 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson and further in view of U.S. Patent 4,717,624 to Ikenaga et al.;
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(ii) Other

None

For at least the following reasons, Appellant submits that these objections and rejections are both technically and legally unsound and should therefore be reversed.

(i)(1) 35 U.S.C. §103

The Examiner rejected claims 5 and 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson. Appellant respectfully traverses this rejection.

Claim 5 recites a method for manufacture of a polyolefin article comprising: selecting an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 - 80  $^{\circ}\text{C}$  range; depositing a peroxide, combined with a polymerizable monomer capable of dissolving polyolefin, on a surface of the oriented polyolefin material; and bonding said oriented polyolefin material to a second polyolefin material by the application of pressure and heat, thereby manufacturing a polyolefin article.

The examiner acknowledges, by withdrawing the previous §102 rejection, that Rasmussen '353 does not disclose, teach or suggest all of the elements of claim 5. M.P.E.P. §707.07(f). While Rasmussen '353 teaches the use of a solvent, no particular solvent is identified. Additionally, Rasmussen '353 does not disclose, teach or suggest the combination of peroxide and a polymerizable monomer combination as a solvent. Accordingly, Frese '359 or Iverson '180 are applied for allegedly teaching a solvent of a peroxide and a polymerizable monomer.

Regarding Iverson '180, the examiner alleges in paragraph 11 of the Office Action that the reference "teaches using peroxide with the polymerizable monomers when it is desired to make a very hard joint (column 3, lines 56-60)." It is clear the examiner is taking this out of context, as Iverson '180 adds benzoyl peroxide to the adhesive. The adhesive defined by Iverson '180 is the mixture of styrene monomer, a solvent retarder, and a polymerization inhibitor. Still further, the examiner alleges that Iverson '180 discloses "bonding a polystyrene body to another substrate using a solvent bonding process wherein the solvent comprises styrene monomer and peroxide." Office Action at page 3, last 3 lines. However, the examiner neglects the **additional solvent retarder and polymerization inhibitor that is required in Iverson '180**. Accordingly, Iverson '180 does not make up for the deficiencies of Rasmussen '353, and the combination does not teach or suggest the claimed invention.

Frese '359 discloses a process of adhering polyolefin objects. The adhesive disclosed in Frese '359 comprises

1. a liquid hydrocarbon,
2. optionally liquid polymerizable hydrocarbons, and,
3. if liquid polymerizable hydrocarbons are present, the addition of a radical forming compound, for example benzoyl peroxide, to obtain radical polymerization. See col. 1, lines 51-56 and col. 2, lines 5-17.

It is clear the examiner is ignoring that this is a **three component adhesive**, and that there is a distinction to be made between the necessary use of the liquid hydrocarbons, and that the liquid hydrocarbon is different from liquid polymerizable hydrocarbons. That is, the liquid polymerizable hydrocarbons are dissolved in the liquid hydrocarbons. See also claims 1 and 2.

Accordingly, neither Iverson '180 or Frese '359 make up for the deficiencies of Ramussen '353, and therefore it would not be obvious to add a peroxide to the adhesive of Ramussen '353.

Accordingly, there are clear distinctions between the adhesives disclosed in the references and the claimed two-part adhesive. Additionally, the examiner has not demonstrated that the two-part adhesive in claim 5 would be obvious. More particularly, the examiner has not demonstrated how it would be obvious to change the number of components in the adhesive, and the examiner has not shown that the modified adhesive would have the same properties as the adhesive in the reference. Stated differently, Frese '359 would require the subtraction of the liquid hydrocarbons. However, the liquid hydrocarbons are required in Frese '359 to perform as disclosed. Accordingly, removing a component from Frese '359 is not something one of skill in the art would consider doing, and there is no motivation in Frese '359 to remove the liquid hydrocarbons component. Addressing Iverson '180, it is even less likely to modify the adhesive given the number of components.

For all of the reasons stated above, this rejection cannot be sustained.

Additionally, claim 7, depending from claim 5, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

**(i)(2) 35 U.S.C. §103**

The Examiner rejected claims 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson and further in view of U.S. Patent 4,717,624 to Ikenaga et al. Appellant respectfully traverses this rejection.

Claim 8, depending from claim 5, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

**(i)(3) 35 U.S.C. §103**

The Examiner rejected claims 11 and 12 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No.

3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson, and further in view of U.S. Defensive Publication No. T888,001. Appellant respectfully traverses this rejection.

Claims 11 and 12, depending from claim 5, are also allowable for the reasons above. Moreover, these claims are further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

**(i)(4) 35 U.S.C. §103**

The Examiner rejected claims 5 and 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen. Appellant respectfully traverses this rejection.

As discussed above, Frese '359 discloses a process of adhering polyolefine objects. The adhesive disclosed in Frese '359 comprises

1. a liquid hydrocarbon,
2. optionally liquid polymerizable hydrocarbons, and,
3. if liquid polymerizable hydrocarbons are present, the addition of a radical forming compound, for example benzoyl peroxide, to obtain radical polymerization. See col. 1, lines 51-56 and col. 2, lines 5-17.

It is clear the examiner is ignoring that this is a **three component adhesive**, and that there is a distinction to be made between the necessary use of the liquid hydrocarbons, and that the liquid hydrocarbon is different from liquid polymerizable hydrocarbons. That is, the liquid polymerizable hydrocarbons are dissolved in the liquid hydrocarbons. See also claims 1 and 2.

Ramussen '353 is applied only for the bonding of two polyolefin films. Ramussen '353 does not make up for the deficiencies of Frese '359, and therefore it would not be obvious to add a peroxide to the adhesive of Ramussen '353.

Accordingly, there are clear distinctions between the adhesives disclosed in the references and the claimed two-part adhesive. Additionally, the examiner has not demonstrated that the two-part adhesive in claim 5 would be obvious. More particularly, the examiner has not demonstrated how it would be obvious to change the number of components in the adhesive, and the examiner has not shown that the modified adhesive would have the same properties as the adhesive in the reference. Stated differently, Frese '359 would require the subtraction of the

liquid hydrocarbons. However, the liquid hydrocarbons are required in Frese '359 to perform as disclosed. Accordingly, removing a component from Frese '359 is not something one of skill in the art would consider doing, and there is no motivation in Frese '359 to remove the liquid hydrocarbons component.

For all of the reasons stated above, this rejection cannot be sustained.

Additionally, claim 7, depending from claim 5, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

**(i)(5) 35 U.S.C. §103**

The Examiner rejected claim 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen and further in view of U.S. Patent 4,717,624 to Ikenaga et al. Appellant respectfully traverses this rejection.

Claim 8, depending from claim 5, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

**(i)(6) 35 U.S.C. §103**

The Examiner rejected claims 11 and 12 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen and further in view of U.S. Defensive Publication No. T888,001. Appellant respectfully traverses this rejection.

Claims 11 and 12, depending from claim 5, are also allowable for the reasons above. Moreover, these claims are further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

**(ii) Other**

None

IX. CLAIMS INVOLVED IN THE APPEAL

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

Conclusion

In view of the foregoing reasons, Appellant submits that all of the rejections of claims 5, 7, 8, 11 and 12 are improper and should not be sustained. Therefore, a reversal of the Rejections of July 17, 2003 (Paper No. 20), as to claims 5, 7, 8, 11 and 12, is respectfully requested. Accordingly, the application and all claims 5, 7, 8, 11 and 12 are in condition for allowance, and notice to that effect is solicited.

Dated: February 18, 2004

Respectfully submitted,

By 

David T. Nikaido

Registration No.: 22,663

Robert S. Green

Registration No.: 41,800

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Attorneys for Applicant

**APPENDIX A****Claims Involved in the Appeal of Application Serial No. 09/355,946**

1. (Withdrawn) A polyolefin article characterized as being composed of polyolefin and as including an oriented polyolefin material so that its average coefficient of linear expansion is maintained at a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) in the 20 – 80  $^{\circ}\text{C}$  range.
2. (Withdrawn) The polyolefin article as recited in claim 1, characterized in that said oriented polyolefin material is formed of high-density polyethylene.
3. (Withdrawn) The polyolefin article as recited in claim 2, characterized in that said high-density polyethylene has a weight-average molecular weight within the range of 100,000 – 500,000.
4. (Withdrawn) The polyolefin article as recited in any one of claims 1-3, characterized in that said oriented polyolefin material is provided in a sheet form.
5. (Previously presented) A method for manufacture of a polyolefin article comprising:  
selecting an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 – 80  $^{\circ}\text{C}$  range;  
depositing a peroxide, combined with a monomer capable of dissolving polyolefin, on a surface of the oriented polyolefin material; and  
bonding said oriented polyolefin material to a second polyolefin material by the application of pressure and heat, thereby manufacturing a polyolefin article.
6. (Cancelled)
7. (Previously presented) The method of claim 5, wherein said oriented polyolefin material comprises an oriented polyolefin sheet and the second polyolefin material comprises a second polyolefin sheet.

8. (Previously presented) The method of claim 7, wherein said oriented polyolefin material is an oriented polyolefin sheet having a minus value for average coefficient of linear expansion in the 20 – 80 °C range, and said oriented polyolefin sheet is superposed on a second polyolefin sheet having a plus value for average coefficient of linear expansion in the 20 – 80 °C range.

9. (Withdrawn) A method for manufacture of a polyolefin article characterized as including the steps of:

covering an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  (/°C) for average coefficient of linear expansion in the 20 – 80 °C range with a layer of polyolefin having a melting point lower than that of said oriented polyolefin material;

subsequent to the covering with the polyolefin layer, effecting joining of the oriented polyolefin material by the application of pressure and heat at a temperature below the melting point of the oriented polyolefin material but sufficient to soften or melt said covering polyolefin.

10. (Withdrawn) The method for manufacture of a polyolefin article as recited in claim 9, characterized in that said oriented polyolefin material comprises a plurality of oriented polyolefin sheets having minus values for average coefficient of linear expansion in the 20 – 80 °C range, and that an oriented or unoriented polyolefin sheet having a plus value for average coefficient of linear expansion in the 20 – 80 °C range is interposed between adjacent ones of said oriented polyolefin sheets covered with said polyolefin layer for subsequent joining by the application of pressure and heat.

11. (Previously presented) The method of claim 5, wherein said oriented polyolefin material is prepared by subjecting the oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  (/°C) for average coefficient of linear expansion in the 20 – 80 °C range to a heat treatment to pre-melt the surface.

12. (Previously presented) The method of claim 5, further comprising:

selecting an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  (/°C) for average coefficient of linear expansion in the 20 – 80 °C range;  
subjecting the material to the heat treatment so that a surface thereof melts; and

applying pressure and heat at a temperature below a melting point of the heat-treated oriented polyolefin material but sufficient to melt said surface thereby joining the oriented polyolefin material to the second polyolefin material.



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In the Office Action of July 17, 2003 (Paper No. 20), the following rejections were presented by the Examiner:

- (i) 35 U.S.C. §103
  - (1) The Examiner rejected claims 5 and 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson;
  - (2) The Examiner rejected claim 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson and further in view of U.S. Patent 4,717,624 to Ikenaga et al.;
  - (3) The Examiner rejected claims 11 and 12 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson, and further in view of U.S. Defensive Publication No. T888,001;

- (4) The Examiner rejected claims 5 and 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen;
- (5) The Examiner rejected claim 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen and further in view of U.S. Patent 4,717,624 to Ikenaga et al.;
- (6) The Examiner rejected claims 11 and 12 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen and further in view of U.S. Defensive Publication No. T888,001

(ii) Other

None

For at least the following reasons, Appellant submits that these objections and rejections are both technically and legally unsound and should therefore be reversed.

(i)(1) 35 U.S.C. §103

The Examiner rejected claims 5 and 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson. Appellant respectfully traverses this rejection.

Claim 5 recites a method for manufacture of a polyolefin article comprising: selecting an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 - 80  $^{\circ}\text{C}$  range; depositing a peroxide, combined with a polymerizable monomer capable of dissolving polyolefin, on a surface of the oriented polyolefin material; and bonding said oriented polyolefin material to a second polyolefin material by the application of pressure and heat, thereby manufacturing a polyolefin article.

The examiner acknowledges, by withdrawing the previous §102 rejection, that Rasmussen '353 does not disclose, teach or suggest all of the elements of claim 5. M.P.E.P. §707.07(f). While Rasmussen '353 teaches the use of a solvent, no particular solvent is identified. Additionally, Rasmussen '353 does not disclose, teach or suggest the combination of peroxide and a polymerizable monomer combination as a solvent. Accordingly, Frese '359 or Iverson '180 are applied for allegedly teaching a solvent of a peroxide and a polymerizable monomer.

Regarding Iverson '180, the examiner alleges in paragraph 11 of the Office Action that the reference "teaches using peroxide with the polymerizable monomers when it is desired to make a very hard joint (column 3, lines 56-60)." It is clear the examiner is taking this out of context, as Iverson '180 adds benzoyl peroxide to the adhesive. The adhesive defined by Iverson '180 is the mixture of styrene monomer, a solvent retarder, and a polymerization inhibitor. Still further, the examiner alleges that Iverson '180 discloses "bonding a polystyrene body to another substrate using a solvent bonding process wherein the solvent comprises styrene monomer and peroxide." Office Action at page 3, last 3 lines. However, the examiner neglects the **additional solvent retarder and polymerization inhibitor that is required in Iverson '180**. Accordingly, Iverson '180 does not make up for the deficiencies of Rasmussen '353, and the combination does not teach or suggest the claimed invention.

Frese '359 discloses a process of adhering polyolefin objects. The adhesive disclosed in Frese '359 comprises

1. a liquid hydrocarbon,
2. optionally liquid polymerizable hydrocarbons, and,
3. if liquid polymerizable hydrocarbons are present, the addition of a radical forming compound, for example benzoyl peroxide, to obtain radical polymerization. See col. 1, lines 51-56 and col. 2, lines 5-17.

It is clear the examiner is ignoring that this is a **three component adhesive**, and that there is a distinction to be made between the necessary use of the liquid hydrocarbons, and that the liquid hydrocarbon is different from liquid polymerizable hydrocarbons. That is, the liquid polymerizable hydrocarbons are dissolved in the liquid hydrocarbons. See also claims 1 and 2.

Accordingly, neither Iverson '180 or Frese '359 make up for the deficiencies of Ramussen '353, and therefore it would not be obvious to add a peroxide to the adhesive of Ramussen '353.

Accordingly, there are clear distinctions between the adhesives disclosed in the references and the claimed two-part adhesive. Additionally, the examiner has not demonstrated that the two-part adhesive in claim 5 would be obvious. More particularly, the examiner has not demonstrated how it would be obvious to change the number of components in the adhesive, and the examiner has not shown that the modified adhesive would have the same properties as the adhesive in the reference. Stated differently, Frese '359 would require the subtraction of the liquid hydrocarbons. However, the liquid hydrocarbons are required in Frese '359 to perform as disclosed. Accordingly, removing a component from Frese '359 is not something one of skill in the art would consider doing, and there is no motivation in Frese '359 to remove the liquid hydrocarbons component. Addressing Iverson '180, it is even less likely to modify the adhesive given the number of components.

For all of the reasons stated above, this rejection cannot be sustained.

Additionally, claim 7, depending from claim 5, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

#### (i)(2) 35 U.S.C. §103

The Examiner rejected claims 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No. 3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson and further in view of U.S. Patent 4,717,624 to Ikenaga et al. Appellant respectfully traverses this rejection.

Claim 8, depending from claim 5, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

#### (i)(3) 35 U.S.C. §103

The Examiner rejected claims 11 and 12 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,471,353 to Rasmussen in view of either U.S. Patent No.

3,514,359 to Frese or U.S. Patent No. 2,628,180 to Iverson, and further in view of U.S. Defensive Publication No. T888,001. Appellant respectfully traverses this rejection.

Claims 11 and 12, depending from claim 5, are also allowable for the reasons above. Moreover, these claims are further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

(i)(4) 35 U.S.C. §103

The Examiner rejected claims 5 and 7 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen. Appellant respectfully traverses this rejection.

As discussed above, Frese '359 discloses a process of adhering polyolefine objects. The adhesive disclosed in Frese '359 comprises

1. a liquid hydrocarbon,
2. optionally liquid polymerizable hydrocarbons, and,
3. if liquid polymerizable hydrocarbons are present, the addition of a radical forming compound, for example benzoyl peroxide, to obtain radical polymerization. See col. 1, lines 51-56 and col. 2, lines 5-17.

It is clear the examiner is ignoring that this is a **three component adhesive**, and that there is a distinction to be made between the necessary use of the liquid hydrocarbons, and that the liquid hydrocarbon is different from liquid polymerizable hydrocarbons. That is, the liquid polymerizable hydrocarbons are dissolved in the liquid hydrocarbons. See also claims 1 and 2.

Ramussen '353 is applied only for the bonding of two polyolefin films. Ramussen '353 does not make up for the deficiencies of Frese '359, and therefore it would not be obvious to add a peroxide to the adhesive of Ramussen '353.

Accordingly, there are clear distinctions between the adhesives disclosed in the references and the claimed two-part adhesive. Additionally, the examiner has not demonstrated that the two-part adhesive in claim 5 would be obvious. More particularly, the examiner has not demonstrated how it would be obvious to change the number of components in the adhesive, and the examiner has not shown that the modified adhesive would have the same properties as the adhesive in the reference. Stated differently, Frese '359 would require the subtraction of the

liquid hydrocarbons. However, the liquid hydrocarbons are required in Frese '359 to perform as disclosed. Accordingly, removing a component from Frese '359 is not something one of skill in the art would consider doing, and there is no motivation in Frese '359 to remove the liquid hydrocarbons component.

For all of the reasons stated above, this rejection cannot be sustained.

Additionally, claim 7, depending from claim 5, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

(i)(5) 35 U.S.C. §103

The Examiner rejected claim 8 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen and further in view of U.S. Patent 4,717,624 to Ikenaga et al. Appellant respectfully traverses this rejection.

Claim 8, depending from claim 5, is also allowable for the reasons above. Moreover, this claim is further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

(i)(6) 35 U.S.C. §103

The Examiner rejected claims 11 and 12 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 3,514,359 to Frese in view of U.S. Patent No. 3,471,353 to Rasmussen and further in view of U.S. Defensive Publication No. T888,001. Appellant respectfully traverses this rejection.

Claims 11 and 12, depending from claim 5, are also allowable for the reasons above. Moreover, these claims are further distinguished by the materials recited therein, particularly within the claimed combination. Accordingly, this rejection cannot be sustained.

(ii) Other

None

## IX. CLAIMS INVOLVED IN THE APPEAL

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

### Conclusion

In view of the foregoing reasons, Appellant submits that all of the rejections of claims 5, 7, 8, 11 and 12 are improper and should not be sustained. Therefore, a reversal of the Rejections of July 17, 2003 (Paper No. 20), as to claims 5, 7, 8, 11 and 12, is respectfully requested. Accordingly, the application and all claims 5, 7, 8, 11 and 12 are in condition for allowance, and notice to that effect is solicited.

Dated: February 18, 2004

Respectfully submitted,

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**APPENDIX A****Claims Involved in the Appeal of Application Serial No. 09/355,946**

1. (Withdrawn) A polyolefin article characterized as being composed of polyolefin and as including an oriented polyolefin material so that its average coefficient of linear expansion is maintained at a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) in the 20 – 80  $^{\circ}\text{C}$  range.
2. (Withdrawn) The polyolefin article as recited in claim 1, characterized in that said oriented polyolefin material is formed of high-density polyethylene.
3. (Withdrawn) The polyolefin article as recited in claim 2, characterized in that said high-density polyethylene has a weight-average molecular weight within the range of 100,000 – 500,000.
4. (Withdrawn) The polyolefin article as recited in any one of claims 1-3, characterized in that said oriented polyolefin material is provided in a sheet form.
5. (Previously presented) A method for manufacture of a polyolefin article comprising:  
selecting an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  ( $^{\circ}\text{C}$ ) for average coefficient of linear expansion in the 20 – 80  $^{\circ}\text{C}$  range;  
depositing a peroxide, combined with a monomer capable of dissolving polyolefin, on a surface of the oriented polyolefin material; and  
bonding said oriented polyolefin material to a second polyolefin material by the application of pressure and heat, thereby manufacturing a polyolefin article.
6. (Cancelled)
7. (Previously presented) The method of claim 5, wherein said oriented polyolefin material comprises an oriented polyolefin sheet and the second polyolefin material comprises a second polyolefin sheet.

8. (Previously presented) The method of claim 7, wherein said oriented polyolefin material is an oriented polyolefin sheet having a minus value for average coefficient of linear expansion in the 20 – 80 °C range, and said oriented polyolefin sheet is superposed on a second polyolefin sheet having a plus value for average coefficient of linear expansion in the 20 – 80 °C range.

9. (Withdrawn) A method for manufacture of a polyolefin article characterized as including the steps of:

covering an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  (/°C) for average coefficient of linear expansion in the 20 – 80 °C range with a layer of polyolefin having a melting point lower than that of said oriented polyolefin material;

subsequent to the covering with the polyolefin layer, effecting joining of the oriented polyolefin material by the application of pressure and heat at a temperature below the melting point of the oriented polyolefin material but sufficient to soften or melt said covering polyolefin.

10. (Withdrawn) The method for manufacture of a polyolefin article as recited in claim 9, characterized in that said oriented polyolefin material comprises a plurality of oriented polyolefin sheets having minus values for average coefficient of linear expansion in the 20 – 80 °C range, and that an oriented or unoriented polyolefin sheet having a plus value for average coefficient of linear expansion in the 20 – 80 °C range is interposed between adjacent ones of said oriented polyolefin sheets covered with said polyolefin layer for subsequent joining by the application of pressure and heat.

11. (Previously presented) The method of claim 5, wherein said oriented polyolefin material is prepared by subjecting the oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  (/°C) for average coefficient of linear expansion in the 20 – 80 °C range to a heat treatment to pre-melt the surface.

12. (Previously presented) The method of claim 5, further comprising:

selecting an oriented polyolefin material having a value of not exceeding  $5 \times 10^{-5}$  (/°C) for average coefficient of linear expansion in the 20 – 80 °C range;

subjecting the material to the heat treatment so that a surface thereof melts; and

applying pressure and heat at a temperature below a melting point of the heat-treated oriented polyolefin material but sufficient to melt said surface thereby joining the oriented polyolefin material to the second polyolefin material.